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(54) Improvements in plant pots

(57) A plant pot for containing a growing medium in which one or more plants can grow has an open top and a closed bottom with the top smaller than the bottom; the closed bottom is closed against the passage of the growing medium and can include drainage holes. The pot is of heat sealable plastics material and is formed by sealing and trimming gussets in a tube (by gussets is meant re-entrant folds).

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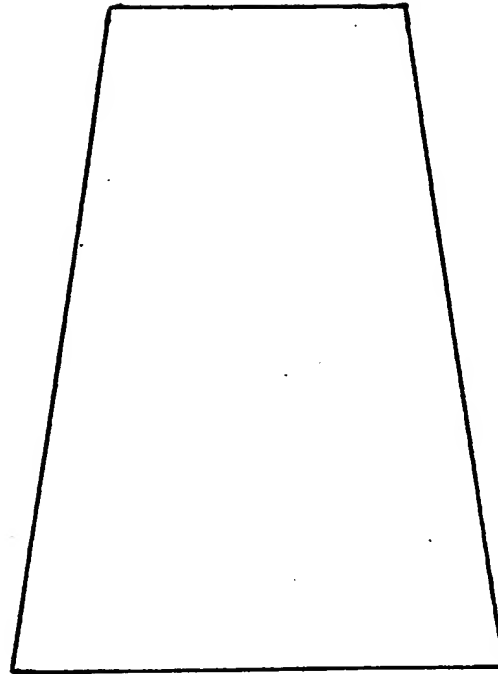


FIG 1

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FIG 2

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## SPECIFICATION

### Improvements in plant pots

5 The present invention concerns plant pots for growing plants in a suitable growing medium.

Conventional rigid plant pots are of inverted frustoconical shape with an open top larger than a closed base. It is also known to use  
10 growing bags which are sacks of a plastics material in which holes are cut in one side and thus can be regarded as having a barrel-shape section of growing medium; these growing bags are large and cannot be re-  
15 garded as mere plant pots. It is also known to use a straight-sided bag of flexible plastics material with an open top of the same size as a closed bottom.

The present invention proposes a plant pot  
20 having an open top and a closed bottom wherein the top is smaller than the bottom.

By "closed" it is intended to signify that the end is substantially sealed against the passage of the growing medium but not to  
25 signify any absence of drainage holes.

There are two main advantages of the new shape in that the growing medium, such as potting compost, is concentrated at the bottom of the pot where the roots tend to concentrate and less compost is wasted by being  
30 near the surface where there are fewer roots and also there is less evaporative surface area for a given volume of growing medium. There are further advantages in that the shape is  
35 inherently more stable since the centre of gravity is lower and with imperforate pots, without drainage holes, the pots can be put inside decorative containers with the shape of the pot enforcing a gap between the pot and  
40 the container which can be filled with water to give the humid conditions liked by most plants.

The one disadvantage with rigid pots is that they will not stack but the present invention is  
45 envisaged for use with flexible pots, for which stacking is immaterial.

The taper on the sides of the pot need not be extreme. For example, a pot could be 20  
50 cm. high and taper from a square base of 15cm. sides to a square top of 9 cm sides and it will be seen that the cross-sectional area of the top is only 36% of the area of the base leading to an appreciable saving in growing medium and evaporative surface area.

55 The plant pots of the present invention preferably have a box base and another aspect of the present invention provides a method of making a plastic bag with a box base wherein a gusseted tube of a heat sealable plastics  
60 material has heat sealed seams extending at 45° formed between each side of each gusset and the adjoining face of the flattened tube with a transverse seam between the faces joining any gap between the inner ends of the  
65 gusset seams and in which surplus material

on the outside of the gusset seams is cropped away.

Normally the plant pots of the present invention will have a square rather than a  
70 rectangular base and there will not be any gap between the inner ends of the gusset seams and so there will be no transverse seam. The tapering of the plant pots can be performed in a similar way. A roll of the flattened tubing  
75 would be fed through a heat sealing station with non-stick plates in the gussets to prevent the two sides of the gussets being sealed together. For a square base the gussets would extend virtually to the centre line of the tubing  
80 and two joining 45° seams would seal the interior of the tubing and act ultimately as the bottom or base of the pot. Similar inclined seams extending along the edges of the flattened tubing from the outer ends of the 45°  
85 seams would ultimately provide the tapered sides of the pot. The surplus material outside the seams would be cropped off before, after or simultaneously with the heat sealing. The pots could be left joined to each other in a  
90 strip or parted into individual pots.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings in which:—

95 *Figure 1* is a side view of a plant pot according to the present invention,

*Figure 2* is a schematic section showing the formation of seams, and

*Figure 3* is a schematic plan view also  
100 showing the manufacture of the pot.

The plant pot shown in Fig. 1 is approximately 20 cm. high and tapers from a square base of 15 cm side to a square top of approximately 9 cm side and is made of an  
105 opaque heat-sealable plastics material such as black polythene.

A convenient way of making the pots is to start with the plastics material in the form of a roll of flattened gusseted tubing 4 in which  
110 the gussets 5 extend virtually to the centre line. This tubing is fed to a heat sealing station in which non-stick plates 6 extend into the gussets. Four 45° seams 7 are now formed joining each side of each gusset to the adjoining face of the tubing. Four inclined  
115 seams 8 are formed along the sides of the tubing joining each side of the gussets to the adjoining face of the tubing. The material between the outside edges of the flattened  
120 tubing is surplus and can be trimmed or cropped away simultaneously with, before or after the heat sealing of the seams. A neck 10 can be left between adjoining bags for convenience in handling which neck is severed  
125 before use. The pots have greater neatness and visual appeal if turned inside-out to conceal the small amount of surplus material not cropped away.

The plant pots could be supplied already  
130 filled with growing compost. It is envisaged

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- that the pots would more or less completely made with only a final sealing operation after inserting the compost. It is also foreseen that filled pots may taper to a point which would be cut off and the pot inserted upside down into water to wet the compost and the seed inserted through the cut-off point so that as the plant grew the pot would form a stretchy collar around the stem of the plant so that when moved into the garden insects could not enter the bag; however provision would have to be made so that when the plant demanded more water than initially in the pot the extra water could be provided (this would probably entail cutting the pot and allowing insects to enter). If the plants grew too big for the pots, the pots could be entirely cut away and the plants transplanted or just the bases cut away and the plant grown on by so-called ring culture.

#### CLAIMS

1. A plant pot having a closed bottom and an open top wherein the top is smaller than the bottom.
2. A plant pot according to claim 1 which is made of a heat-sealable plastics material and which tapers uniformly from bottom to top.
3. A method of making a flower or plant pot with a so-called box base wherein a tube of heat sealable plastics material with re-entrant folds so as to provide two unfolded sides of the pot with alternate folded sides of the pot is heat sealed so as to provide seams at substantially 45° between the adjoining folded and unfolded sides of the pot to form the base and further seams extending along the tube but at an angle to form the tapered sides of the pot.
4. A method according to claim 3 wherein non-stick plates are inserted into the folds prior to heat sealing to prevent the folded halves of the folded sides heat sealing together and wherein the desired seams are made simultaneously relying on the said non-stick plates to prevent undesired seams.
5. A plant pot substantially as herein described as illustrated in Figs. 1 and 2 of the accompanying drawings.
6. A method of making a plant pot as claimed in claim 5 substantially as herein described with reference to Fig. 3. of the accompanying drawings.